

AstroDAbis: tagging neighbours remotely through TAP and LOD

Norman Gray (Glasgow, UK) & **Bob Mann** (ROE, UK)

Astroinformatics 2011, Sorrento

JISC



University
of Glasgow



THE UNIVERSITY *of* EDINBURGH

the problem

Astronomers are very good at sharing data, but poorer at sharing knowledge. The AstroDAbis service helps share two types of knowledge:

- information about single objects, in the form of user-supplied tags
- the results of, or raw information for, cross-matching, in the form of co-identifications or neighbour tables

Both are types of *annotation*

norman gray

Astronomers are better at sharing data than sharing knowledge

Annotations:

information about single objects, in the form of user-supplied tags

the results of, or raw information for, cross-matching, in the form of co-identifications or neighbour tables

Astronomers are better at sharing data than sharing knowledge

AstroDAbis is about sharing knowledge through annotation

Annotations:

information about single objects, in the form of user-supplied tags

the results of, or raw information for, cross-matching, in the form of co-identifications or neighbour tables



Data is available in archives
 Access to data is mediated by the VO
 But that's data, not interpretation/knowledge



ADS (and the journals in general) have knowledge
...and links to NED & SIMBAD (sim CDS links with A&A)
And see Alberto's talk about data links & ADS
But machines can't read journals (yet)
...and nothing from the data to the literature

the problem, i

“give me all the
sources in this
catalogue that have
been identified as
quasars”

norman gray

this limits the effective exploitation of these archives,
– the user of an archive has no direct means of taking advantage of the existing knowledge

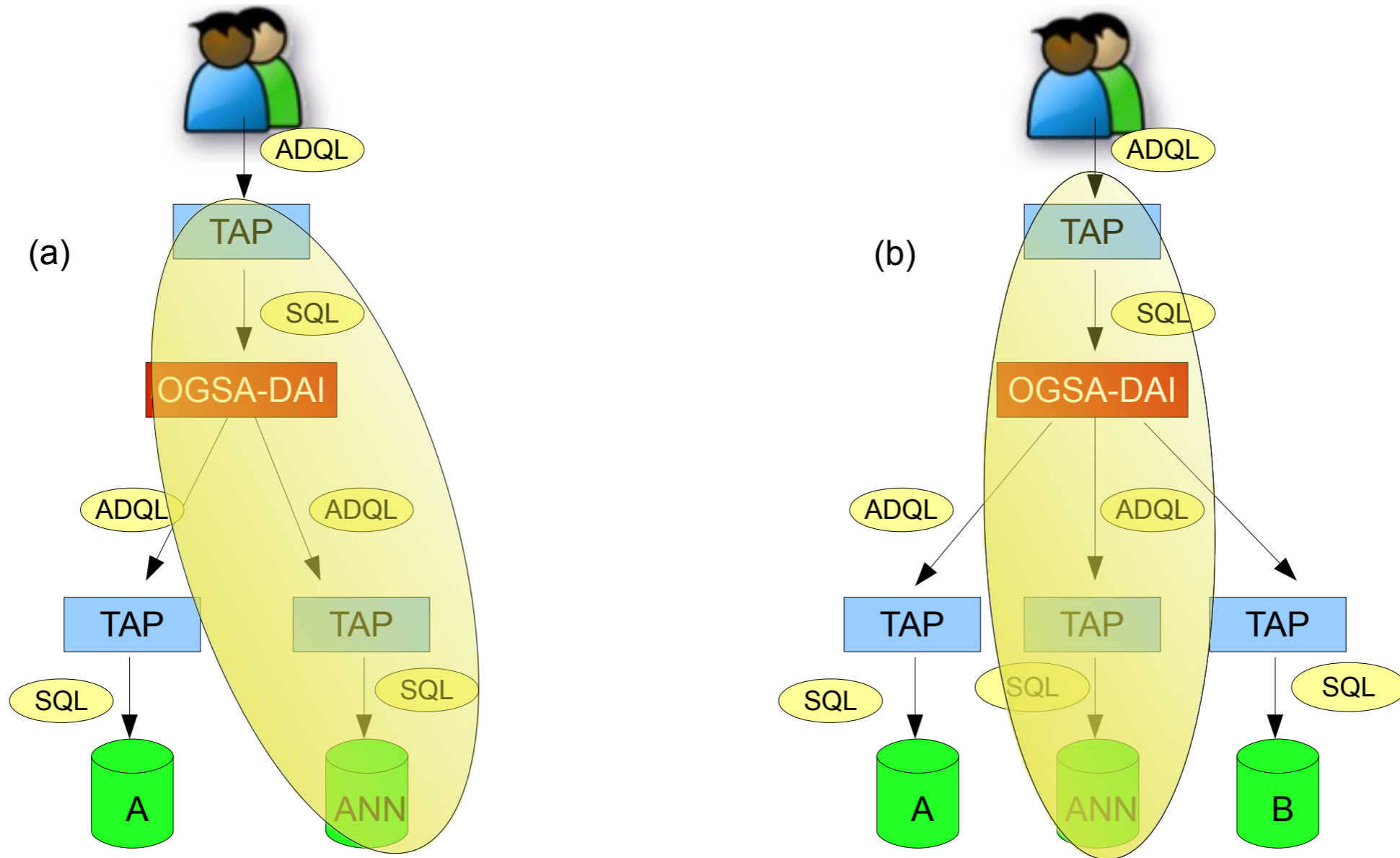
the problem, ii

- Cross-match or neighbour tables are archive-specific
- ...and not shared
- ...and can't be inter-archive
- AstroDAS system: Bose, Mann & Prina-Ricotti (2006)
adapted DAS to OpenSkyQuery

norman gray

BioDAS: biology community has a system which allows for distributed annotation of genetic sequences

using astrodabis



norman gray

TAP service provides the federated schema that allows people to make distributed queries in the VO for the first time (in a standards-compliant way – i.e. SkyQuery was great, but wasn't implementing IVOA standards).

Binary relations...

ident	subjcol	subjid	objcol	objid	rel
123	cat1	'abcd'	cat2	'efgh'	'contain'

ident	subjcol	subjid	tag
123	cat1	'abcd'	quasar

...and unary relations

- Astronomer can annotate ObjId X in catalogue A with tag “quasar”
- Astronomer can jointly annotate ObjId X in catalogue A, and Y in B, saying they are the same, or within a given distance of each other
- Catalogues A and B don't have to be in the same archive, and the annotations are shareable through TAP and Linked-Data

```
<http://example3.org/foo/123>  
  tagged [  
    tag "quasar";  
  ];
```

(schema TBC)

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue

```
<http://example3.org/foo/123>
  tagged [
    tag "quasar";
  ];
  hasNeighbour [
    obj <http://example4.org/bar/456>;
    sepArcsec "10";
  ];
```

(schema TBC)

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue

```
<http://example3.org/foo/123>
  tagged [
    tag "quasar";
    tagger <http://astrodabis/u/99> ];
  hasNeighbour [
    obj <http://example4.org/bar/456>;
    sepArcsec "10";
    tagger <http://astrodabis/u/99> ];
```

(schema TBC)

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue

```
<http://example3.org/foo/123>  
  tagged [  
    tag "quasar";  
    tagger <http://astrodabis/u/99> ];  
  hasNeighbour [  
    obj <http://example4.org/bar/456>;  
    sepArcsec "10";  
    tagger <http://astrodabis/u/99> ];  
  inPaper <http://ads/2001bibcode>.
```

(schema TBC)

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue

```
<http://example3.org/foo/123>
  tagged [
    tag "quasar";
    tagger <http://astrodabis/u/99> ];
  hasNeighbour [
    obj <http://example4.org/bar/456>;
    sepArcsec "10";
    tagger <http://astrodabis/u/99> ];
  inPaper <http://ads/2001bibcode>.

<http://example1.org/messier/31>
  owl:sameAs <http://example2.org/ngc/224>.
```

(schema TBC)

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue


```
<http://example3.org/foo/123>
  tagged [
    tag "quasar";
    tagger <http://astrodabis/u/99> ];
  hasNeighbour [
    obj <http://example4.org/bar/456>;
    sepArcsec "10";
    tagger <http://astrodabis/u/99> ];
  inPaper <http://ads/2001bibcode>.

<http://example1.org/messier/31>
  owl:sameAs <http://example2.org/ngc/224>.
```

@normangray

<http://nxg.me.uk/norman/>

<http://astrodabis.jiscinvolve.org>

Schema still provisional
Illustrated as Linked Data; stress available through TAP
Built to be extensible – links to SIMBAD & dbpedia?
Don't have to be in same catalogue